

DEPARTMENT OF COMMERCE

BUREAU OF STANDARDS

George K. Burgess, Director

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UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR
BOOTS, RUBBER, SHORT, HEAVY

FEDERAL SPECIFICATIONS BOARD SPECIFICATION No. 494

This specification was officially promulgated by the Federal Specifications Board on June 10, 1927, for the use of the departments and independent establishments of the Government in the purchase of short, heavy rubber boots.

[The technical requirements of this specification shall become mandatory for all departments and independent establishments of the Government not later than September 10, 1927. They may be put into effect, however, at any earlier date, after promulgation.]

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I. GENERAL SPECIFICATIONS

United States Government general specifications for rubber goods, Federal Specifications Board specification No. 59, in effect on date of invitation for bids, shall form a part of this specification, in so far as the terms are applicable.

II. GRADE

This specification covers one grade only.

III. MATERIAL AND WORKMANSHIP

See Section V, Detail requirements.

IV. GENERAL REQUIREMENTS

See Section V, Detail requirements.

V. DETAIL REQUIREMENTS

1. COMPOUND FOR SMOOTH SOLE AND TAP.—The compound shall contain not less than 38 per cent by weight of good quality Hevea rubber. It shall contain litharge or zinc oxide, whiting, carbon black, sulphur, mineral rubber, tar, and accelerators. The outsoleing shall be black, and shall have a specific gravity not over 1.60.

2. COMPOUND FOR UPPER STOCKS.—The compound shall contain not less than 48 per cent by weight of good quality Hevea rubber. It shall contain litharge or zinc oxide, whiting, carbon black, sulphur, tar, and accelerators. The upper stock shall be black, and shall have a specific gravity not over 1.40.

3. COMPOUND FOR HEELS.—The compound shall contain not less than 14 per cent by weight of medium quality Hevea rubber and shall be so compounded as to produce a balanced wear with the sole of the boot.

4. COMPOUNDS FOR FRICTION.—(a) The high-grade friction as called for in this specification shall consist of a rubber compound containing not less than 40 per cent by weight of good quality Hevea rubber. It shall contain litharge or zinc oxide, whiting, carbon black, sulphur, and such oils and accelerators as may be found necessary to insure perfect adhesion.

(b) A medium quality friction may be used as called for in this specification, to be made of a compound containing not less than 20 per cent by weight of medium quality Hevea rubber. It shall contain litharge or zinc oxide, reclaimed rubber, whiting, carbon black, sulphur, tar, and such oils and accelerators as may be found necessary to insure perfect adhesion.

5. LASTS.—All boots furnished under this specification shall be made over each manufacturer's regular boot trees.

6. MEASUREMENTS.—Measurements shall be based on boot size 9.

(a) *Height*.—The height of boot inside of back shall be not less than 15 inches. The height of boot inside of front shall be not less than 16 inches.

(b) *Girth*.—The circumference at the calf of the boot tree over which the boots are made shall be not less than $16\frac{1}{2}$ inches.

7. WEIGHT.—The weight of finished boots shall be not less than 5 pounds per pair, size 9.

8. FINISH.—Boots are to be black throughout, dull finish, and not varnished. No label over $1\frac{1}{2}$ inches in diameter and not more than one on each boot is permissible.

9. GUM VAMP.—The gum vamp shall be made of the upper stock specified above, and shall be not less than 0.035 inch thick.

10. GUM COUNTER.—The gum counter shall be made of the upper stock specified above, and shall be not less than 0.035 inch thick.

11. GUM ANKLE PIECE.—The gum ankle piece shall be made of a good quality rubber compound, and shall be not less than 0.015 inch thick. It shall be placed between the leg form and leg lining.

12. HEEL AND TOE FOXING.—A heel and toe foxing shall extend completely around the edge of the outsole. It shall be made from either the upper compound or the sole and tap compound specified above.

13. PULL-ONS.—The boots are to be fitted with knob pull-ons.

14. GUM HEEL STAY.—A gum heel stay made from the same rubber compound as is used for the outsole and not less than 0.025 inch thick, shall be placed between the lining and counter of the boot.

15. LEG COVER.—The leg cover shall be made of the upper stock specified above and shall be not less than 0.030 inch thick.

16. BINDING.—There shall be a binding at the top of each boot, not less than $\frac{3}{8}$ inch wide, of a good quality gum.

17. SMOOTH SOLE.—The smooth sole shall be made of the rubber compound specified above and shall be not less than 0.065 inch thick.

18. TAP.—The tap shall be of the same stock as is used for the smooth sole and of the type known to the trade as "long"; that is, extending completely under the heel with a thickness not less than 0.210 inch on the ball. If desired, tap and smooth sole may be combined.

19. HEELS.—The heels shall be made of the rubber compound specified above and shall be not less than $\frac{5}{8}$ inch thick at the thinnest point.

20. LEG FORM.—The leg form shall be made of a cotton fabric weighing not less than 5 ounces per square yard, frictioned on both sides with the high-grade friction compound specified above, and shall be made, as known in the trade, "cut-to-fit."

21. LEG LINING.—The leg lining shall be made of a cotton fabric weighing not less than 7.2 ounces per square yard, and shall be coated on one side with the above specified high-grade friction compound to insure perfect adhesion.

22. TOE LINING.—The toe lining shall be the same as leg lining.

23. VAMP FORM.—The vamp form shall be made of a cotton fabric weighing not less than 5.6 ounces per square yard, frictioned on both sides with the high-grade friction compound specified above.

24. INNER VAMP.—The inner vamp shall be not less than 0.015 inch thick, and may be of gum or of fabric frictioned on both sides with the above specified high-grade friction compound.

25. FRICTION ANKLE.—The friction ankle shall be made of a cotton fabric weighing not less than 4 ounces per square yard, frictioned on both sides with the above specified high-grade friction compound.

26. COUNTER FORM.—The counter form shall be of the same material as the leg form.

27. **FRONT AND BACK STAYS.**—The front and back stays shall be not less than 0.015 inch thick and may be of gum, or of fabric frictioned on both sides with the high-grade friction compound specified above.

28. **SPIKES.**—Spikes shall be of the same material as is used for friction ankle.

29. **SOLE FORM.**—A sole form shall be used consisting of a cotton fabric weighing not less than 5 ounces per square yard, frictioned on both sides with the high-grade friction compound specified above, or an outer filler shall be so placed that the frictioned fabric side will come against the smooth sole.

30. **STIFFENING COUNTERS.**—Stiffening counters shall be made of a cotton fabric weighing not less than 2.5 ounces per square yard, frictioned with the above-specified medium-quality friction compound and coated with a high-grade stiffening compound. The total thickness shall be not less than 0.060 inch.

31. **INSOLE.**—The insole shall be made of a cotton fabric weighing not less than 5 ounces per square yard, coated on one side with a high-grade stiffening compound.

32. **STIFFENING SOLES.**—Stiffening soles of a high-grade rag shall be used to give necessary stiffness to the bottom of the boot. The total thickness of such parts, including the insole, shall be not less than 0.225 inch.

33. **VULCANIZATION.**—Boots shall be so cured under pressure that all parts will be compacted during vulcanization.

34. In order to show in detail the design of the last used, to illustrate the vulcanization and show, in general, the appearance of the boot, the manufacturer upon request shall submit a standard sample; this to be used for any tests thought necessary.

VI. METHODS OF INSPECTION AND TEST

Methods of test shall be as prescribed under United States Government general specifications for rubber goods, Federal Specifications Board specification No. 59, referred to in Section I, in so far as applicable.

VII. PACKING AND MARKING OF SHIPMENTS

Shall be in accordance with best commercial practice unless otherwise specified.

VIII. NOTES

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